C-A OPERATIONS PROCEDURES MANUAL

ATTACHMENT

4.120.14.h Compressor Building 1005H (PEER 19) ODH Tests

C-A-OPM Procedures in which this Attachment is used.		
4.120.14		

Hand Processed Changes

HPC No.	Date	Page Nos.	Initials
_____	_____	_____	_____
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Approved:_____*Signature on File*_____   _____
Collider-Accelerator Department Chairman   Date

V. Castillo

4.120.14.h Compressor Building 1005H (PEER 19) ODH Tests

PASS ANNUAL ACCEPTANCE TEST PROTOCOL

Division A Software Filename and Checksum: Title:_____ **Checksum:** _____

Division B Software Filename and Checksum: Title:_____ **Checksum:** _____

Initial testing complete:

Test Team Leader's Name (Print): _____**Life Number:** _____

Test Team Leader's Name (Sign): _____**Date:** ____/____/____

Acceptance test procedure complete (following repairs and retesting if required):

Test Team Leader's Name (Print): _____**Life Number:**_____

Test Team Leader's Name (Sign): _____**Date:** ____/____/____

Test results reviewed by:

Safety Section Head's Name (Print):_____**Life Number:**_____

Safety Section Head's Name (Sign):_____**Date:** ____/____/____

Test results accepted by Radiation Safety Committee:

RSC Member's Name (Print):_____**Life Number:** _____

 RSC Member's Name (Sign):_____**Date:** ____/____/____

1.1   **Conduct a visual check on Peer 19 ODH boxes following Table 1 below**
        √ = ok,   x = problem

ODH BOXES	Verify mechan condn. ok	Verify elec. condn. ok	Crash/ODH boxes only				Verify all X's corrected
			Division A		Division B		
			Lcd Rdg	Tp2 – Tp4 Vltg	Lcd Rdg	Tp2 – Tp4 Vltg	
5H-ODB4	☐	☐	**%**	**V**	**%**	**V**	☐
5H-ODB5 Sampling System	☐	☐	**%**	**V**	**%**	**V**	☐

Table 1 – Summary of visual check on ODH boxes in the Compressor Building

☐   **Check for Test Acceptance of visual check on Peer 19 ODH boxes**

1.2   **Verification of valid calibration of ODH sensors in Peer 19, following Table 2 below**
        √ = ok,   x = problem

ODH sensor	Verify valid calibration	Record calibration date	Verify all x's corrected	Record new calibration date
AS5H-4A	☐	_____/_____/_____	☐	_____/_____/_____
AS5H-4B	☐	_____/_____/_____	☐	_____/_____/_____
AS5H-5 Sampling Sensor	☐	____/____/____	☐	____/____/____

Table 2 – Verification of valid calibration of ODH sensors in Compressor Building

☐   **Check for Test Acceptance of verification of valid calibration of ODH sensors in Peer 19**

1.3   **Test of Div A ODH sensor AS5H-4 in 5H-ODB4**

     JUMPER   **Tp2 and Tp4** on the **Div A pcb in 5H-ODB4**

☐	**VERIFY**	**MCR** sees **AS5H-3 Div A**	**TRIPPED**
☐	**VERIFY**	**MCR** sees **Compressor ODH** alarm is	**ON**
☐	**VERIFY**	**MCR Compressor ODH** alarm is	**SOUNDING**
☐	**VERIFY**	**Div A blue strobes** on: **5H-ODB1** ☐, **5H-ODB2** ☐, **5H-ODB3** ☐, **5H-ODB4** ☐ and **5H-ODB5** ☐ are	**FLASHING**
☐	**VERIFY**	**All red Strobes** are	**FLASHING**
☐	**VERIFY**	**All rotating red Beacons** are	**ON**
☐	**VERIFY**	Fan **CSF4** is	**ON**
☐	**VERIFY**	Fan **CSF5** is	**ON**
☐	**VERIFY**	Fan **CEF3** is	**ON**
☐	**VERIFY**	Fan **CEF4** is	**ON**
☐	**VERIFY**	**Attempt** to turn fans **off** at **Stations: 5H-FanB1** ☐, **5H-FanB2** ☐, **CVS-1** ☐, **CVS-2** ☐, **CVS-3** ☐, and **CVS-4** ☐	**FAIL**

     TURN   Bypass Switch **to** Bypass

☐	**VERIFY**	**All Strobes and Beacons**	**STOP**

     TURN   Bypass Switch **from** Bypass

☐	**VERIFY**	**All Strobes and Beacons**	**CONTINUE**

     REMOVE   Jumper between **Tp2 and Tp4**

☐	**VERIFY**	**MCR** sees **AS5H-4 Div A**	**NOT Tripped**
☐	**VERIFY**	**Div A blue strobes** on: **5H-ODB1** ☐, **5H-ODB2** ☐, **5H-ODB3** ☐, **5H-ODB4** ☐ and **5H-ODB5** ☐ are	**OFF**
☐	**VERIFY**	**All red Strobes** are	**OFF**
☐	**VERIFY**	**All rotating red Beacons** are	**OFF**

     ACK   **ODH** in **MCR Acknowledge Screen**

☐	**VERIFY**	**MCR** sees **Compressor ODH** alarm is	**OFF**
☐	**VERIFY**	**Compressor ODH** alarm is	**Not Sounding**

     AFTER   **> 90 Secs**

☐	**VERIFY**	Fan **CSF4** is	**OFF**
☐	**VERIFY**	Fan **CSF5** is	**OFF**
☐	**VERIFY**	Fan **CEF3** is	**OFF**
☐	**VERIFY**	Fan **CEF4** is	**OFF**

     ☐   **Check for Div A Test Acceptance of sensor AS5H-4**

1.4   **Test of Div B ODH sensor AS5H-4 in 5H-ODB4**

        JUMPER   **Tp2 and Tp4** on the **Div B pcb in 5H-ODB4**

☐	**VERIFY**	**MCR** sees **AS5H-4 Div B**	**TRIPPED**
☐	**VERIFY**	**MCR** sees **Compressor ODH** alarm is	**ON**
☐	**VERIFY**	**MCR Compressor ODH** alarm is	**SOUNDING**
☐	**VERIFY**	**Div A blue strobes** on: **5H-ODB1** ☐, **5H-ODB2** ☐, **5H-ODB3** ☐,	
		5H-ODB4 ☐ and **5H-ODB5** ☐ are	**FLASHING**
☐	**VERIFY**	**All red Strobes** are	**FLASHING**
☐	**VERIFY**	**All rotating red Beacons** are	**ON**
☐	**VERIFY**	Fan **CSF4** is	**ON**
☐	**VERIFY**	Fan **CSF5** is	**ON**
☐	**VERIFY**	Fan **CEF3** is	**ON**
☐	**VERIFY**	Fan **CEF4** is	**ON**
☐	**VERIFY**	**Attempt** to turn fans **off** at **Stations: 5H-FanB1** ☐, **5H-FanB2** ☐,	**FAIL**
		CVS-1 ☐, **CVS-2** ☐, **CVS-3** ☐, and **CVS-4** ☐	

	TURN	Bypass Switch **to** Bypass	
☐	**VERIFY**	**All Strobes and Beacons**	**STOP**
	TURN	Bypass Switch **from** Bypass	
☐	**VERIFY**	**All Strobes and Beacons**	**CONTINUE**

        REMOVE   Jumper between **Tp2 and Tp4**

☐	**VERIFY**	**MCR** sees **AS5H-4 Div B**	**NOT Tripped**
☐	**VERIFY**	**Div A blue strobes** on: **5H-ODB1** ☐, **5H-ODB2** ☐, **5H-ODB3** ☐,	
		5H-ODB4 ☐ and **5H-ODB5** are	**OFF**
☐	**VERIFY**	**All red Strobes** are	**OFF**
☐	**VERIFY**	**All rotating red Beacons** are	**OFF**

        ACK   **ODH** in **MCR Acknowledge Screen**

☐	**VERIFY**	**MCR** sees **Compressor ODH** alarm is	**OFF**
☐	**VERIFY**	**Compressor ODH** alarm is	**Not Sounding**

        AFTER   **> 90 Secs of jumper removal**

☐	**VERIFY**	Fan **CSF4** is	**OFF**
☐	**VERIFY**	Fan **CSF5** is	**OFF**
☐	**VERIFY**	Fan **CEF3** is	**OFF**
☐	**VERIFY**	Fan **CEF4** is	**OFF**

        ☐   **Check for Div B Test Acceptance of sensor AS5H-4**

1.5   **Test of Div A ODH sensor AS5H-4 in 5H-ODB4 for > 10 minutes trip**

        JUMPER   **Tp2 and Tp4** on the **Div A pcb in 5H-ODB4**

☐	**VERIFY**	**MCR** sees **AS5H-4 Div A**	**TRIPPED**
☐	**VERIFY**	**MCR** sees **Compressor ODH** alarm is	**ON**
☐	**VERIFY**	**MCR Compressor ODH** alarm is	**SOUNDING**
☐	**VERIFY**	**Div A blue strobes** on: **5H-ODB1** ☐, **5H-ODB2** ☐, **5H-ODB3** ☐, **5H-ODB4** ☐ and **5H-ODB5** ☐ are	**FLASHING**
☐	**VERIFY**	**All red Strobes** are	**FLASHING**
☐	**VERIFY**	**All rotating red Beacons** are	**ON**
☐	**VERIFY**	Fan **CSF4** is	**ON**
☐	**VERIFY**	Fan **CSF5** is	**ON**
☐	**VERIFY**	Fan **CEF3** is	**ON**
☐	**VERIFY**	Fan **CEF4** is	**ON**

        AFTER   **> 10 minutes of jumper insertion**

☐	**VERIFY**	Fan **CSF1** is	**ON**
☐	**VERIFY**	Fan **CSF2** is	**ON**
☐	**VERIFY**	Fan **CSF3** is	**ON**
☐	**VERIFY**	Fan **CSF4** is	**ON**
☐	**VERIFY**	Fan **CSF5** is	**ON**
☐	**VERIFY**	Fan **CEF1** is	**ON**
☐	**VERIFY**	Fan **CEF2** is	**ON**
☐	**VERIFY**	Fan **CEF3** is	**ON**
☐	**VERIFY**	Fan **CEF4** is	**ON**

	TURN	Bypass Switch **to** Bypass	
☐	**VERIFY**	**All Strobes and Beacons**	**STOP**
	AFTER	**> 90 Secs**	
☐	**VERIFY**	**All Fans**	**OFF**
	TURN	Bypass Switch **from** Bypass	
☐	**VERIFY**	**All Strobes and Beacons**	**CONTINUE**
	AFTER	**> 30 Secs**	
☐	**VERIFY**	**Fans: CSF4** ☐, **CSF5** ☐, **CEF3** ☐ and **CEF4** ☐ are	**ON**

        REMOVE   Jumper between **Tp2 and Tp4**

☐	**VERIFY**	**MCR** sees **AS5H-4 Div A**	**NOT Tripped**
☐	**VERIFY**	**MCR** sees **Compressor ODH** alarm is	**ON**
☐	**VERIFY**	**MCR Compressor ODH** alarm is	**SOUNDING**
☐	**VERIFY**	**Div A blue strobes** on: **5H-ODB1** ☐, **5H-ODB2** ☐, **5H-ODB3** ☐, **5H-ODB4** ☐ and **5H-ODB5** are	**FLASHING**
☐	**VERIFY**	**All red Strobes** are	**FLASHING**
☐	**VERIFY**	**All rotating red Beacons** are	**ON**

        ACK   **ODH** in **MCR Acknowledge Screen**

☐	**VERIFY**	**MCR** sees **Compressor ODH** alarm is	**OFF**
☐	**VERIFY**	**Compressor ODH** alarm is	**Not Sounding**

        AFTER   **> 90 Secs from jumper removal**

☐	**VERIFY**	Fan **CSF4** is	**OFF**
☐	**VERIFY**	Fan **CSF5** is	**OFF**
☐	**VERIFY**	Fan **CEF3** is	**OFF**
☐	**VERIFY**	Fan **CEF4** is	**OFF**

☐   **Check for Test Acceptance of Div A ODH sensor AS5H-4 in 5H-ODB4 for > 10 minutes trip**

1.6   Test of Div B ODH sensor AS5H-4 in 5H-ODB4 for > 10 minutes trip

JUMPER   **Tp2 and Tp4** on the **Div B pcb in 5H-ODB4**

☐	**VERIFY**	**MCR** sees **AS5H-4 Div B**	**TRIPPED**
☐	**VERIFY**	**MCR** sees **Compressor ODH** alarm is	**ON**
☐	**VERIFY**	**MCR Compressor ODH** alarm is	**SOUNDING**
☐	**VERIFY**	**Div B blue strobes** on: **5H-ODB1** ☐, **5H-ODB2** ☐, **5H-ODB3** ☐, **5H-ODB4** ☐ and **5H-ODB5** ☐ are	**FLASHING**
☐	**VERIFY**	**All red Strobes** are	**FLASHING**
☐	**VERIFY**	**All rotating red Beacons** are	**ON**
☐	**VERIFY**	Fan **CSF4** is	**ON**
☐	**VERIFY**	Fan **CSF5** is	**ON**
☐	**VERIFY**	Fan **CEF3** is	**ON**
☐	**VERIFY**	Fan **CEF4** is	**ON**

AFTER   **> 10 minutes of jumper insertion**

☐	**VERIFY**	Fan **CSF1** is	**ON**
☐	**VERIFY**	Fan **CSF2** is	**ON**
☐	**VERIFY**	Fan **CSF3** is	**ON**
☐	**VERIFY**	Fan **CSF4** is	**ON**
☐	**VERIFY**	Fan **CSF5** is	**ON**
☐	**VERIFY**	Fan **CEF1** is	**ON**
☐	**VERIFY**	Fan **CEF2** is	**ON**
☐	**VERIFY**	Fan **CEF3** is	**ON**
☐	**VERIFY**	Fan **CEF4** is	**ON**

	TURN	Bypass Switch **to** Bypass	
☐	**VERIFY**	**All Strobes and Beacons**	**STOP**
	AFTER	**> 90 Secs**	
☐	**VERIFY**	**All Fans**	**OFF**
	TURN	Bypass Switch **from** Bypass	
☐	**VERIFY**	**All Strobes and Beacons**	**CONTINUE**
	AFTER	**> 30 Secs**	
☐	**VERIFY**	**Fans: CSF4** ☐, **CSF5** ☐ , **CEF3** ☐ and **CEF4** ☐ are	**ON**

REMOVE   Jumper between **Tp2 and Tp4**

☐	**VERIFY**	**MCR** sees **AS5H-4 Div B**	**NOT Tripped**
☐	**VERIFY**	**MCR** sees **Compressor ODH** alarm is	**ON**
☐	**VERIFY**	**MCR Compressor ODH** alarm is	**SOUNDING**
☐	**VERIFY**	**Div B blue strobes** on: **5H-ODB1** ☐, **5H-ODB2** ☐, **5H-ODB3** ☐,	

		5H-ODB4 □ and **5H-ODB5** are	**FLASHING**
□	**VERIFY**	**All red Strobes** are	**FLASHING**
□	**VERIFY**	**All rotating red Beacons** are	**ON**
	ACK	**ODH** in **MCR on Acknowledge Screen**	
□	**VERIFY**	**MCR** sees **Compressor ODH** alarm is	**OFF**
□	**VERIFY**	**Compressor ODH** alarm is	**Not Sounding**
	AFTER	**> 90 Secs from jumper removal**	
□	**VERIFY**	Fan **CSF4** is	**OFF**
□	**VERIFY**	Fan **CSF5** is	**OFF**
□	**VERIFY**	Fan **CEF3** is	**OFF**
□	**VERIFY**	Fan **CEF4** is	**OFF**

□   **Check for Test Acceptance of Div B ODH sensor AS5H-4 in 5H-ODB4 for > 10 minutes trip**

1.7   Test of Manual ON/OFF Switch at Station CVS-3

	PRESS	Fan **ON** button at **Station CVS-3**	
	START	**90 Sec counter**	
□	**VERIFY**	Fan **CSF1** is	**ON**
□	**VERIFY**	Fan **CSF2** is	**ON**
□	**VERIFY**	Fan **CSF3** is	**ON**
□	**VERIFY**	Fan **CSF4** is	**ON**
□	**VERIFY**	Fan **CSF5** is	**ON**
□	**VERIFY**	Fan **CEF1** is	**ON**
□	**VERIFY**	Fan **CEF2** is	**ON**
□	**VERIFY**	Fan **CEF3** is	**ON**
□	**VERIFY**	Fan **CEF4** is	**ON**
	PRESS	Fan **OFF** button at **Station CVS-3**	
	AFTER	**> 90 Secs from ON** command	
□	**VERIFY**	Fan **CSF1** is	**OFF**
□	**VERIFY**	Fan **CSF2** is	**OFF**
□	**VERIFY**	Fan **CSF3** is	**OFF**
□	**VERIFY**	Fan **CSF4** is	**OFF**
□	**VERIFY**	Fan **CSF5** is	**OFF**
□	**VERIFY**	Fan **CEF1** is	**OFF**
□	**VERIFY**	Fan **CEF2** is	**OFF**
□	**VERIFY**	Fan **CEF3** is	**OFF**
□	**VERIFY**	Fan **CEF4** is	**OFF**

□   **Check for Test Acceptance of Manual ON/OFF Switch at Station CVS-3**

1.8   Test of Manual ON/OFF Switch at Station CVS-4

       PRESS   Fan **ON** button at **Station CVS-4**

       START   **90 Sec counter**

☐ **VERIFY**	Fan **CSF1** is	**ON**
☐ **VERIFY**	Fan **CSF2** is	**ON**
☐ **VERIFY**	Fan **CSF3** is	**ON**
☐ **VERIFY**	Fan **CSF4** is	**ON**
☐ **VERIFY**	Fan **CSF5** is	**ON**
☐ **VERIFY**	Fan **CEF1** is	**ON**
☐ **VERIFY**	Fan **CEF2** is	**ON**
☐ **VERIFY**	Fan **CEF3** is	**ON**
☐ **VERIFY**	Fan **CEF4** is	**ON**

       PRESS   Fan **OFF** button at **Station CVS-4**

       AFTER   **> 90 Secs from ON** command

☐ **VERIFY**	Fan **CSF1** is	**OFF**
☐ **VERIFY**	Fan **CSF2** is	**OFF**
☐ **VERIFY**	Fan **CSF3** is	**OFF**
☐ **VERIFY**	Fan **CSF4** is	**OFF**
☐ **VERIFY**	Fan **CSF5** is	**OFF**
☐ **VERIFY**	Fan **CEF1** is	**OFF**
☐ **VERIFY**	Fan **CEF2** is	**OFF**
☐ **VERIFY**	Fan **CEF3** is	**OFF**
☐ **VERIFY**	Fan **CEF4** is	**OFF**

    ☐   **Check for Test Acceptance of Manual ON/OFF Switch at Station CVS-4**

1.9   Test of ODH sensor AS5H-4A in 5H-ODB4 with gas

       FLOW   **Helium or Nitrogen across sensor AS5H-4A**

☐ **VERIFY**	**MCR** sees **AS5H-4 Div A**	**TRIPPED**

       RECORD   **Oxygen** trip level for **Div A**   _____ **%**

☐ **VERIFY**	**MCR** sees **Compressor ODH** alarm is	**ON**
☐ **VERIFY**	**Compressor ODH** alarm is	**SOUNDING**

☐ **VERIFY**	Fan **CSF4** is	**ON**
☐ **VERIFY**	Fan **CSF5** is	**ON**
☐ **VERIFY**	Fan **CEF3** is	**ON**
☐ **VERIFY**	Fan **CEF4** is	**ON**

       HALT   **Flow** of gas on **AS5H-4A**

       WAIT   For **AS5H-4A** to clear (level ~ trip-level above)

ACK   **ODH** in **MCR Acknowledge Screen**

☐ **VERIFY**   **MCR** sees **Compressor ODH** alarm is   **OFF**
☐ **VERIFY**   **Compressor ODH** alarm is   **Not Sounding**

☐ **VERIFY**   Fan **CSF4** is   **OFF**
☐ **VERIFY**   Fan **CSF5** is   **OFF**
☐ **VERIFY**   Fan **CEF3** is   **OFF**
☐ **VERIFY**   Fan **CEF4** is   **OFF**

☐ **Check for Acceptance of Test of ODH sensor AS5H-4A in 5H-ODB4 with gas**

1.10   **Test of ODH sensor AS5H-4B in 5H-ODB4 with gas**

       FLOW   **Helium or Nitrogen across sensor AS5H-4B**

☐ **VERIFY**   **MCR** sees **AS5H-4 Div B**   **TRIPPED**

       RECORD   **Oxygen** trip level for **Div B**   _____ **%**

☐ **VERIFY**   **MCR** sees **Compressor ODH** alarm is   **ON**
☐ **VERIFY**   **MCR Compressor ODH** alarm is   **SOUNDING**

☐ **VERIFY**   Fan **CSF4** is   **ON**
☐ **VERIFY**   Fan **CSF5** is   **ON**
☐ **VERIFY**   Fan **CEF3** is   **ON**
☐ **VERIFY**   Fan **CEF4** is   **ON**

       HALT   **Flow** of gas on **AS5H-4B**

       WAIT   For **AS5H-4B** to clear (level ~ trip-level above)

       ACK   **ODH** in **MCR Acknowledge Screen**

☐ **VERIFY**   **MCR** sees **Compressor ODH** alarm is   **OFF**
☐ **VERIFY**   **Compressor ODH** alarm is   **Not Sounding**

☐ **VERIFY**   Fan **CSF4** is   **OFF**
☐ **VERIFY**   Fan **CSF5** is   **OFF**
☐ **VERIFY**   Fan **CEF3** is   **OFF**
☐ **VERIFY**   Fan **CEF4** is   **OFF**

☐ **Check for Acceptance of Test of ODH sensor AS5H-4B in 5H-ODB4 with gas**

1.11   **Test of ODH Sampling System sensor AS5H-5 in 5H-ODB5 with gas**

        FLOW   **Helium or Nitrogen ~ 1" from far input port of Sampling System**

☐ **VERIFY**   **MCR** sees **AS5H-1** ☐**, -2** ☐**, -3** ☐**, -4** ☐ **Div A** and **B**   **ODH**

    RECORD   **Time for Trip**   _____ **secs**
    RECORD   **Oxygen** trip level for **Div A**   _____ **%**
    RECORD   **Oxygen** trip level for **Div B**   _____ **%**

☐ **VERIFY**   **MCR** sees **Compressor ODH** alarm **on Cryo page** is   **ON**
☐ **VERIFY**   **Div A & B Blue strobes & Alarms** on: **5H-ODB1** ☐**, 5H-ODB2** ☐**,**
                  5H-ODB3 ☐**, 5H-ODB4** ☐ and **5H-ODB5** ☐ are   **ON**
☐ **VERIFY**   **All red Strobes** are   **FLASHING**
☐ **VERIFY**   **All rotating red Beacons** are   **ON**
☐ **VERIFY**   **MCR** sees **Compressor Fans are**   **ON**
☐ **VERIFY**   Fan **CSF1** is   **ON**
☐ **VERIFY**   Fan **CSF2** is   **ON**
☐ **VERIFY**   Fan **CSF3** is   **ON**
☐ **VERIFY**   Fan **CSF4** is   **ON**
☐ **VERIFY**   Fan **CSF5** is   **ON**
☐ **VERIFY**   Fan **CEF1** is   **ON**
☐ **VERIFY**   Fan **CEF2** is   **ON**
☐ **VERIFY**   Fan **CEF3** is   **ON**
☐ **VERIFY**   Fan **CEF4** is   **ON**
    HALT   **Flow** of gas on **AS5H-5**

    WAIT   For **AS5H-5** to clear (level ~ trip-level above)
☐ **VERIFY**   **MCR** sees **AS5H-1** ☐**, -2** ☐**, -3** ☐**, -4** ☐**, - 5** ☐ **Div A** and **B**   **OK**
☐ **VERIFY**   **Div A & B Blue strobes & Alarms** on: **5H-ODB1** ☐**, 5H-ODB2** ☐**,**
                  5H-ODB3 ☐**, 5H-ODB4** ☐ and **5H-ODB5** ☐ are   **OFF**
☐ **VERIFY**   **All red Strobes** are   **OFF**
☐ **VERIFY**   **All rotating red Beacons** are   **OFF**

    AFTER   **> 90 Secs**

☐ **VERIFY**   **MCR** sees **Compressor Fans are**   **OFF**
☐ **VERIFY**   Fan **CSF1** is   **OFF**
☐ **VERIFY**   Fan **CSF2** is   **OFF**
☐ **VERIFY**   Fan **CSF3** is   **OFF**
☐ **VERIFY**   Fan **CSF4** is   **OFF**
☐ **VERIFY**   Fan **CSF5** is   **OFF**
☐ **VERIFY**   Fan **CEF1** is   **OFF**
☐ **VERIFY**   Fan **CEF2** is   **OFF**
☐ **VERIFY**   Fan **CEF3** is   **OFF**
☐ **VERIFY**   Fan **CEF4** is   **OFF**
    ACK   **Compressor ODH** on **MCR Acknowledge Screen**

☐ **VERIFY**   **MCR** sees **Compressor ODH** alarm **on Cryo page** is   **OK**

☐   **Check for Acceptance of Test of ODH sensor AS5H-5 in 5H-ODB5 with gas**

1.12   **Test of Sampling System Pump**

	SELECT	**Airflow** from the **Sampling System Panel View (SSPV) menu**	
	RECORD	**Airflow** value from **SSPV**	_____
	RECORD	**HiThresh** value from **SSPV**	_____
	RECORD	**LoThresh** value from **SSPV**	_____
	RECORD	**Offset** value from **SSPV**	_____
	SELECT	**Exit** from **SSPV** menu to get **Operation**	**STATUS**
☐	**VERIFY**	**Operation Status** is	**NORMAL**
	CLOSE	**Flow valve** to **Sensor**	
☐	**VERIFY**	After **~ _____ Secs (~ 15 secs acceptable) SSPV shows**	**TROUBLE**
☐	**VERIFY**	**MCR** sees **AS5H-1** ☐, **-2** ☐, **-3** ☐, **-4** ☐, **- 5** ☐ **Div A** and **B**	**ODH**
☐	**VERIFY**	**MCR** sees **Compressor ODH** alarm **on Cryo page** is	**ON**
☐	**VERIFY**	**Div A & B Blue strobes & Alarms** on: **5H-ODB1** ☐, **5H-ODB2** ☐, **5H-ODB3** ☐, **5H-ODB4** ☐ and **5H-ODB5** ☐ are	**ON**
☐	**VERIFY**	**All red Strobes** are	**FLASHING**
☐	**VERIFY**	**All rotating red Beacons** are	**ON**
☐	**VERIFY**	**MCR** sees **Compressor Fans are**	**ON**
☐	**VERIFY**	Fan **CSF1** is	**ON**
☐	**VERIFY**	Fan **CSF2** is	**ON**
☐	**VERIFY**	Fan **CSF3** is	**ON**
☐	**VERIFY**	Fan **CSF4** is	**ON**
☐	**VERIFY**	Fan **CSF5** is	**ON**
☐	**VERIFY**	Fan **CEF1** is	**ON**
☐	**VERIFY**	Fan **CEF2** is	**ON**
☐	**VERIFY**	Fan **CEF3** is	**ON**
☐	**VERIFY**	Fan **CEF4** is	**ON**
	OPEN	**Flow valve** to **Sensor**	
☐	**VERIFY**	**MCR** sees **AS5H-1** ☐, **-2** ☐, **-3** ☐, **-4** ☐, **- 5** ☐ **Div A** and **B still**	**ODH**
☐	**VERIFY**	**MCR** sees **Compressor ODH** alarm **on Cryo page** is **still**	**ON**
☐	**VERIFY**	**Div A & B Blue strobes & Alarms** on: **5H-ODB1** ☐, **5H-ODB2** ☐, **5H-ODB3** ☐, **5H-ODB4** ☐ and **5H-ODB5** ☐ are **still**	**ON**
☐	**VERIFY**	**All red Strobes** are **still**	**FLASHING**
☐	**VERIFY**	**All rotating red Beacons** are **still**	**ON**
☐	**VERIFY**	**MCR** sees **Compressor Fans are still**	**ON**
☐	**VERIFY**	Fan **CSF1** is	**ON**
☐	**VERIFY**	Fan **CSF2** is	**ON**
☐	**VERIFY**	Fan **CSF3** is	**ON**
☐	**VERIFY**	Fan **CSF4** is	**ON**
☐	**VERIFY**	Fan **CSF5** is	**ON**
☐	**VERIFY**	Fan **CEF1** is	**ON**
☐	**VERIFY**	Fan **CEF2** is	**ON**
☐	**VERIFY**	Fan **CEF3** is	**ON**
☐	**VERIFY**	Fan **CEF4** is	**ON**

	GO TO	**Main menu on SSPV** (Hit Enter key twice)	
	SELECT	**Silence** option	
	ENTER	**Password**	
	SELECT	**Reset and Hit Enter**	
☐	**VERIFY**	**After _____ secs (~ 15 secs acceptable) SSPV Alarm** is	**OFF**
☐	**VERIFY**	**MCR** sees **AS5H-1 ☐, -2 ☐, -3 ☐, -4 ☐ Div A** and **B**	**OK**
☐	**VERIFY**	**Div A & B Blue strobes & Alarms** on: **5H-ODB1 ☐, 5H-ODB2 ☐, 5H-ODB3 ☐, 5H-ODB4 ☐** and **5H-ODB5 ☐** are	**OFF**
☐	**VERIFY**	**All red Strobes** are	**OFF**
☐	**VERIFY**	**All rotating red Beacons** are	**OFF**
	AFTER	**> 90 Secs**	
☐	**VERIFY**	**MCR** sees **Compressor Fans are**	**OFF**
☐	**VERIFY**	Fan **CSF1** is	**OFF**
☐	**VERIFY**	Fan **CSF2** is	**OFF**
☐	**VERIFY**	Fan **CSF3** is	**OFF**
☐	**VERIFY**	Fan **CSF4** is	**OFF**
☐	**VERIFY**	Fan **CSF5** is	**OFF**
☐	**VERIFY**	Fan **CEF1** is	**OFF**
☐	**VERIFY**	Fan **CEF2** is	**OFF**
☐	**VERIFY**	Fan **CEF3** is	**OFF**
☐	**VERIFY**	Fan **CEF4** is	**OFF**
	SELECT	**Exit** from **SSPV** menu to get **Operation**	**STATUS**
☐	**VERIFY**	**Operation Status** is	**NORMAL**
	SELECT	**Airflow** from the **Sampling System Panel View (SSPV) menu**	
	RECORD	**Airflow** value from **SSPV**	_____
	RECORD	**HiThresh** value from **SSPV**	_____
	RECORD	**LoThresh** value from **SSPV**	_____
	RECORD	**Offset** value from **SSPV**	_____
	RESET	**Compressor ODH** in **MCR**	
	LEAVE	**SSPV** in menu with **Operation Status**	**NORMAL**
☐	**VERIFY**	**MCR** sees **Compressor ODH** alarm **on Cryo page** is	**OK**

☐   **Check for acceptance of Test of Sampling System Pump**

END OF TEST PROCEDURE

TTL: Sign for completion of initial testing: _____

Date: _____/____/_____

TTL: Sign for completion of final testing: _____

Date: _____/____/_____